

BEFORE THE
POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

IN THE MATTER OF
PACIFIC GRINDING WHEEL, INC.,

Appellant,

v.

PUGET SOUND AIR POLLUTION
CONTROL AGENCY,

Respondent.

PCHB No. 80-226

FINAL FINDINGS OF FACT,
CONCLUSIONS OF LAW
AND ORDER

THIS MATTER, the appeal from the issuance of a \$250 civil penalty for the alleged violation of Section 9.03(b)(2) of Regulation I, having come on regularly for formal hearing on the 24th day of March, 1981, in Seattle, Washington and appellant appearing through its attorney Robert B. Willoughby; respondent appearing by its attorney Meagan Foley, with Nat W. Washington, presiding, and the Board having considered the exhibits, records and file herein, and having mailed its Proposed Order to the parties on the 20th day of April, 1981, and more than twenty days having elapsed from said service; and

1 The Board having received exceptions to said Proposed Order from
2 appellant and respondent and having received a reply by appellant to
3 respondent's exceptions, and the Board having considered the
4 exceptions, granting them in part and denying them in part, and being
5 fully advised in the premises, now makes these

6 FINDINGS OF FACT

7 I

8 Pursuant to RCW 43.21B.260, respondent has filed with the Board a
9 certified copy of its Regulation I and amendments thereto, which are
10 noticed.

11 II

12 On November 6, 1980, at about 1:30 p.m., respondent's inspector
13 noticed a light blue colored plume rising from appellant's plant
14 located near Marysville, Washington. The plume was emanating from
15 kiln stack No. 2. The wind direction was primarily from the east but
16 changed at times to come from the southeast. The sky was overcast and
17 it was raining slightly. The inspector positioned himself southeast
18 of the stack at a distance of about one-quarter mile, so that the
19 plume could be observed against a background of evergreen trees. The
20 inspector recorded opacities ranging from 40 percent to 50 percent for
21 fifteen consecutive minutes.

22 III

23 After discussing the matter with an employee of appellant, the
24 inspector issued Notice of Violation No. 17443. On November 25, 1980,
25 respondent sent to appellant by certified mail a Notice and Order of

1 Civil Penalty No. 4916 of \$250 for the alleged violation of Section
2 9.03(b) (2) of respondent's Regulation I. The Notice and Order of
3 Civil Penalty is the subject of the instant appeal.

4 IV

5 Section 9.03(b) of respondent's Regulation I makes it unlawful for
6 any person to cause or allow the emission of any air contaminant for a
7 period or periods aggregating more than three minutes in any one hour
8 which is:

- 9 (1) Darker in shade than that described as No. 1 (20 percent
10 density) on the Ringelmann Chart, as published by the United
11 States Bureau of Mines; or
12 (2) Of such opacity as to obscure an observer's view to a degree
13 equal to or greater than does smoke described in Subsection
14 9.03(b) (1).

15 V

16 Appellant's defense was that respondent's inspector had failed to
17 follow proper procedures in making his observations of the opacity of
18 the plume in the following respects:

- 19 1. That in addition to the plume from kiln stack No. 2, the
20 inspector also had a visible emission from the resinoid oven
21 stack in his line of view and thus violated the guidelines
22 set forth in State of Washington Department of Ecology Source
23 Test Method 9A (hereinafter "Method 9A" or "Method 9"), which
24 states that the observer's line of sight should not include
25 more than one plume at a time when multiple stacks are
26 involved.

1 stack. We find, therefore, that the light rain did not affect the
2 accuracy of the inspector's observations.

3 VIII

4 The inspector in his testimony and in his written report
5 consistently places his position while making his observations as
6 having been southeast of the plume.

7 The plume and wind direction, while the readings were being taken,
8 apparently varied and were never clearly established. The inspector's
9 written report (Exhibit A-1) stated that the wind direction was
10 "east-south east." In his testimony at the hearing he stated that the
11 wind was "from the east and southeast, and more from the east."¹

12 The plume and wind direction as drawn on the rough diagram in the
13 written report appears to be about north-northeast when compared with
14 the compass direction "N" as depicted on the diagram. It appears,
15 however, from his testimony and from the remainder of the written
16 report, that the plume (wind) direction as shown on the diagram was
17 not correctly drawn.

18
19 1. It is apparent that the words "east-south east" written by the
20 inspector in his report under the heading "wind direction" were
21 intended by him to mean that the wind was variable and coming from the
22 east and southeast. These words, however, when used to indicate wind
direction customarily mean a wind from a compass point of about
112.5°. East-southeast is defined in Websters New World Dictionary
as follows:

23 the direction, or the point on a mariner's compass,
24 halfway between due east and southeast; 22° 30' south
25 of due east. 1. in or toward this direction. 2. from
this direction: as an east-southeast wind. Emphasis
added.

1 During his testimony, when asked if he was approximately
2 perpendicular to the plume directon when he made his readings he
3 answered as follows:

4 I wasn't approximately perpendicular. The wind was
5 from the east and southeast, and more from the east.
6 And my location was southeast of the plant. (TR.18)

7 This candid and forthright statement makes it clear that his position
8 was not approximately perpendicular to the plume as provided by Source
9 Test Method 9A² of the Department of Ecology, which he and other
10 inspectors for Puget Sound Air Pollution Control Agency (hereinafter
11 "PSAPCA") use as a guideline.

12 2. State of Washington Department of Ecology Source Test Method 9A,
13 which is essentially the same as Source Test Method 9 of the U.S.
14 Environmental Protection Agency, is attached hereto as attachment
15 "A". The following are portions of Method 9A which are pertinent to
16 this matter:

17 The qualified observer shall stand at a distance
18 sufficient to provide a clear view of the emissions
19 with the sun oriented in the 140° sector of his
20 back. Consistent with maintaining the above
21 requirement, the observer shall, as much as possible,
22 make his observations from a position such that his
23 line of vision is approximately perpendicular to the
24 plume direction.

25

26 The observer shall record the name of the plant,
27 emission location, type of facility, observer's name
and affiliation, and the date on a field data sheet.
The time, estimated distance to the emission
location, approximate wind direction, estimated wind
speed, description of the sky condition (presence and
color of clouds), and plume background are recorded
on a field data sheet at the time opacity readings
are initiated and completed.

(Emphasis added.)

1 The chief of the enforcement division of respondent testified that
2 respondent is not required by law or regulation to use Method 9, but
3 that it is used "pretty much as a standard procedure by the agency";
4 and that PSAPCA's inspectors are taught to use source Method 9 in the
5 classes which train them how to determine the opacity of emissions.
6 The following are pertinent portions of Mr. Busby's testimony
7 regarding Method 9:

8 Q. (By Ms. Foley; transcript page 43) What are the
9 inspectors required to follow?

10 A. They're not required to follow anything. The
11 inspectors use Method 9 as a guideline. But in fact
12 nowhere in the Washington Clean Air Act, nowhere in
13 the Washington Administrative Codes, and nowhere in
14 Regulation I, are there requirements imposed upon the
15 inspector to use Method 9. It is used and has been
16 used by the inspector for guidance. It's pretty much
17 standard procedure by the agency. And as far as I
18 know everywhere in the United States of America.

15

16 Q. (By Mr. Willoughby; transcript page 47) Is it
17 correct that you are, the department enforcement
18 division, as a matter of policy, uses method 9A as a
19 guideline of how to proceed in making readings as a
20 matter of policy?

21 A. We follow these guidelines, yes and we always have.

20

21 Q. (By Mr. Akana; transcript page 48) Mr. Busby, you
22 mentioned that you are a certified smoke reader?

23 A. Yes.

24 Q. And what method is one who takes that test judged
25 by? Is there a certain?

1 A. The procedures that are used by the Department of
2 Ecology in their smoke training and recertification,
3 as it relates to their machine, they follow EPA
4 Method 9.

5 Q. Does that, to your knowledge, differ in any
6 significant respect to DOE's Method 9?

7 A. No. They're essentially verbatim.

8 Q. So you essentially learn the federal and state method
9 and then proceed in using those as a guideline in the
10 agency's jurisdiction?

11 A. Yes.

12 The inspector testified that he used Method 9A as a guideline and
13 that it provided that observations be made at a point approximately
14 perpendicular to the plume direction. The following are pertinent
15 portions of his testimony on these matters:

16 Q. (By Mr. Willoughby; transcript page 17) Now, in your work
17 Mr. Grenier, is there a guideline that you follow in reading
18 emissions?

19 A. Yes. We do utilize guidelines.

20 Q. Do you use the State of Washington Department of Ecology
21 source test Method 9A?

22 A. That would be the one, yes.

23 Q. And part of the source test Method 9A is that you're to make
24 your observations from a position such that your line of
25 visibility is approximately perpendicular to the plume
26 direction, is that correct?

27 A. Yes.

IX

It appears that at the time the inspector was reading the plume,
the wind was variable, and was blowing "from the east (90°) and
southeast (135°), and more from east." With wind conditions such as

1 this, the inspector in making all of his observations approximately
2 southeast (135°) of the plume did not substantially follow
3 Method 9. During the time the wind direction was approximately
4 southeast, the inspector, who was standing approximately southeast of
5 the plume, would have been looking almost directly down wind and down
6 the plume. There was no evidence as to the number of observations
7 made while the wind was blowing in this direction. The inspector
8 testified that he did not "look directly down the plume," but he did
9 not eliminate the possibility that the angle of his line of vision was
10 small. Even when the wind was blowing from the east, the angle of the
11 inspector's line of vision would have been only about 45° and the
12 sight path through the plume would have been much longer than it would
13 have been had he placed himself approximately perpendicular or about
14 90° from the plume direction. The longer the visual path through
15 the plume, the greater the plume opacity will appear to the
16 observer.³ It appears, therefore, that the opacity readings
17 obtained by the inspector may well have been much greater than they
18 would have been had he substantially followed the recognized
19 procedures of Method 9.

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21
22 3. Guidelines for Evaluations of Visible Emissions - EPA 340/1-7007,
23 April 1975, U.S. Environmental Protection Agency, Section 7.2 states
in part:

24 The longer the path through the plume the greater the
25 opacity will appear.

1 The inspector stated that he placed himself where he did in order
2 that he might avail himself of the contrasting background afforded by
3 some green trees, but respondent did not establish that this is a
4 valid reason for not taking a position approximately perpendicular
5 (90°) to the wind and plume direction. Nor did respondent establish
6 that the inspector "as much as possible made his observation from a
7 position approximately perpendicular to the plume direction."⁴

8 X

9 Any Conclusion of Law which should be deemed a Finding of Fact is
10 hereby adopted as such.

11 From these Findings the Board comes to these

12 CONCLUSIONS OF LAW

13 I

14 As stated by respondent's chief enforcement officer, Method 9 is
15 considered "pretty much" standard procedure by PSAPCA and is so
16 accepted all over the county. It is also the procedure taught to
17 respondent's inspectors. For these reasons Method 9 is a highly
18

19 4. State of Washington Department of Ecology Source Test Method 9A
20 sets forth the exception to the procedure of making observations as
21 much as possible from a position approximately perpendicular to the
22 plume direction, as follows:

23 The qualified observer shall stand at a distance
24 sufficient to provide a clear view of the emissions
25 with the sun oriented in the 140° sector to his
26 back. Consistent with maintaining the above
27 requirement, the observer shall, as much as possible,
make his observations from a position such that his
line of vision is approximately perpendicular to the
plume direction. . .

26 FINAL FINDINGS OF FACT,
27 CONCLUSIONS OF LAW & ORDER

1 useful reference to be used in determining whether a particular
2 opacity observation was conducted in such a way that the opacity
3 readings may be expected to be reasonably accurate. It is a useful
4 reference for this purpose even though its applied use by PSAPCA is
5 not mandated by law or regulation. Therefore, the Board has
6 considered Method 9 as a reference in aiding it to determine the
7 weight to be given the testimony of the inspector.

8 II

9 By deviating materially from the recognized procedures set forth
10 in Method 9, without providing adequate explanation, respondent's
11 inspector failed to establish that he took reliable opacity readings.
12 Since the opacity readings are questionable, respondent failed to
13 establish that the emissions were of an opacity greater than allowed
14 by Section 9.03(b) of Regulation I. Consequently, respondent failed
15 to meet its burden of proof.

16 III

17 Since Conclusion of Law II is dispositive of this matter we do not
18 address the remaining issues raised by appellant.

19 IV

20 Any Finding of Fact which should be deemed a Conclusion of Law is
21 hereby adopted as such.

22 From these Conclusions the Board enters this
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24
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26

ORDER

Respondent's Notice and Order of Civil Penalty No. 4916 is reversed.

DONE this 14th day of September, 1981.

POLLUTION CONTROL HEARINGS BOARD

Nat W. Washington
NAT W. WASHINGTON, Chairman

David Akana
DAVID AKANA, Member

Gayle Rothrock
GAYLE ROTHROCK, Member

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

SOURCE TEST METHOD 9A

VISUAL DETERMINATION OF OPACITY FOR A THREE MINUTE STANDARD

1. Principle

The opacity of emissions from stationary sources is determined visually by a qualified observer.

2. Procedure

The observer must be certified according to the "Criteria for Smoke and Opacity Training School 1970-1971" of the Oregon-Washington Air Quality Committee, except that the average error not exceed 7.5%, all readings are made in percent opacity and no void readings (except in the case of operator error).

The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction, and when observing opacity of emissions from rectangular outlets (e.g. roof monitors, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case, the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g. stub stacks on baghouses).

The observer shall record the name of the plant, emission location type of facility, observer's name and affiliation, and the date on a field data sheet. The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on a field data sheet at the time opacity readings are initiated and completed.

The observer should make note of the ambient relative humidity, ambient temperature, the point in the plume that the observations were made, the estimated depth of the plume at the point of observation, and the color and condition of the plume. It is also helpful if pictures of the plume are taken.

Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume, but instead shall observe the plume momentarily at 15-second intervals.

ATTACHMENT "A"

When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible.

When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water vapor and the formation of the steam plume.

Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on an observational record sheet. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

3. Analysis

The opacity is determined by the highest 13 observations in any consecutive 60-minute period.

4. References

- (1) Federal Register, Vol. 36, No. 247, Page 24895, Dec. 23, 1971.
- (2) "Criteria for Smoke and Opacity Training School 1970-1971"
Oregon-Washington Air Quality Committee.
- (3) "Guidelines for Evaluation of Visible Emissions." EPA 340/1-75-007.
Environmental Protection Agency, Washington, D.C., April, 1975.